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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,570	05/31/2000	Steven M. Reynolds	P99, 0629	3873

23641 7590 11/07/2002

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EXAMINER

LAU, TUNG S

ART UNIT PAPER NUMBER

2863

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/584,570

Applicant(s)

REYNOLDS ET AL.

Examiner

Tung S Lau

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12-Sept 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-39, 47, 48, 50, 51 and 53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39, 47, 48, 50, 51 and 53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. The office action on 6-25-2002 is vacated after the phone interview with the applicant's representative.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 38, 39, 47, 48, 50, 51 and 53 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Miller (US patent 5,563,351) in view of Buck et al. (US patent 5,996,422) and Garrett et al. (U.S. Patent 4,951,271).

Miller discloses maintenance of a pump having wear parts(col. 1, Lines 61-65) processor (col. 2, lines 52-58), memory (col. 3, lines 36-49), operational data of the pump storing in the memory from a sensor, storing part identification and the wear part, update and compare the data to determine a particular part if it need

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to replace (col. 3, lines 17-37), modify the operation of the pump according to data from sensor output is a cycle flow rate, filling rate (col. 3, lines 39-49), the sense element is a temperature (col. 3, lines 12-17), pressure (col. 2-3, lines 59-7), acceleration rate (col. 3, lines 38-49), communicate with stand alone computer (see fig. 2), link to other processor (col. 4, lines 7-31), sense at least one structural operating behavior of the pump (col. 1, lines 60-67).

Miller does not disclose a diaphragm type pump, acoustic sensing technique.

Buck discloses the usage of the diaphragm type pump (col. 3, lines 30-50), for a precise control system (col. 1, lines 40-51). Garrett discloses using an acoustic vibration sensing to have a low cost and high sensitivity system (col. 2, lines 19-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Miller to have the use of a diaphragm type pump and acoustic sensing as taught by Buck and Garrett in order to predict wear in the system at low cost and highly sensitive system.

b. Claims 6, 30 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Miller, Buck and Garrett as applied to the claims above, and further in view of Kubota et al. (US 6,192,299).

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The Miller combination disclose a method including the subject matter discussed above except the usage of the check valve in the system, Kubota uses a check valve in the system to direct flow (col. 7, lines 6-7, lines 66-13), to have an accurate automatic measured operation characteristic (col. 3, lines 25-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Miller to have the usage of the check valve in the system in order to have an accurate automatic measured system to adjust the operation of a pump.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 703-305-3309.

The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John S Hiltén can be reached on 703-308-0719. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TL

September 12, 2002



JOHN S. HILTÉN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800